CLAIMS

1. An apparatus comprising:

at least one radiation source to emit radiation;

at least one radiation detector to detect the radiation; and

at least one indicator coupled to at least one radiation detector to provide behavior control feedback to a subject based on the detected radiation.

2. The apparatus of claim 1, wherein at least one radiation source includes at least one laser.

3. The apparatus of claim 1, wherein at least one radiation detector includes at least one photoelectric detector.

4. The apparatus of claim 1, wherein:

the apparatus includes at least two radiation detectors; and

the apparatus further includes at least two radiation polarizers, each radiation polarizer of the at least two radiation polarizers being disposed in front of a different radiation detector of the at least two radiation detectors such that radiation incident to the apparatus passes through each radiation polarizer before the radiation impinges on the detectors, each radiation polarizer having a different polarization orientation.

5. The apparatus of claim 4, wherein:

a first radiation polarizer of the at least two radiation polarizers has a first polarization orientation;

a second radiation polarizer of the at least two radiation polarizers has a second polarization orientation; and

the first polarization orientation is orthogonal to the second polarization orientation.

6. The apparatus of claim 4, wherein the radiation emitted from the apparatus is polarized radiation.

7. The apparatus of claim 6, wherein the polarized radiation is linearly polarized radiation.

8. The apparatus of claim 6, wherein:

the radiation emitted from at least one source is linearly polarized radiation; and

the apparatus further includes at least one quarter wave plate disposed such that the linearly polarized radiation emitted from the at least one source passes through the at least one quarter wave plate to generate circularly polarized radiation.

9. The apparatus of claim 1, further including:

at least one modulator coupled to at least one radiation source to encode at least some of the radiation emitted by the apparatus; and

at least one filter to filter the detected radiation so as to pass only encoded radiation, the at least one filter being at least one of optically and electrically coupled to at least one radiation detector such that at least one indicator provides the behavior control feedback based on detected encoded radiation.

10. The apparatus of claim 9, wherein the at least one modulator encodes at least some of the radiation emitted by the apparatus with a constant frequency.

11. The apparatus of claim 10, wherein:

the at least one filter passes only detected radiation encoded with the constant frequency; and

at least one indicator provides the behavior control feedback based only on the detected radiation encoded with the constant frequency.

12. The apparatus of claim 1, further including at least one impact detector, coupled to at least one indicator, to detect a pressure disturbance, wherein the at least one indicator provides the behavior control feedback based on at least one of the pressure disturbance and the detected radiation.

13. The apparatus of claim 1, further including an implement operated by the subject to perform a movement task, wherein:

at least one radiation source and at least one radiation detector are coupled to the implement; and

the behavior control feedback provided by at least one indicator includes at least one indication of a successful operation of the implement as the subject operates the implement to perform the movement task.

14. The apparatus of claim 13, wherein the behavior control feedback provided by at least one indicator includes at least one instantaneous indication of a successful operation of the implement as the subject operates the implement to perform the movement task.

15. The apparatus of claim 13, wherein:

at least one indicator includes at least one processor to determine a rotation angle of the implement during the movement task based on the detected radiation; and

the behavior control feedback provided by the at least one indicator is based on at least the rotation angle of the implement.

16. The apparatus of claim 15, wherein the at least one indicator provides the behavior control feedback when the rotation angle of the implement is within a predetermined range with respect to a reference orientation.

17. The apparatus of claim 16, wherein the predetermined range is adjustable.

18. The apparatus of claim 15, wherein:

the implement is a sporting implement; and

the behavior control feedback provided by the at least one indicator includes at least one indication of a successful swing of the sporting implement.

19. The apparatus of claim 18, wherein:

the sporting implement is a golf club; and

the rotation angle is a club rotation angle about a first axis through the golf club along a length of a shaft of the golf club.

20. The apparatus of claim 1, wherein at least one indicator includes at least one processor to process at least one detected radiation signal output by at least one radiation detector based on the detected radiation.

21. The apparatus of claim 20, wherein at least one processor includes a timer to control at least one indicator so as to provide the behavior control feedback for at least a minimum perceivable time, even if at least one detector detects the radiation for less than the minimum perceivable time.

22. The apparatus of claim 20, wherein at least one processor controls at least one indicator so as to provide the behavior control feedback for as long as at least one detector detects the radiation.

23. The apparatus of claim 20, wherein at least one processor includes at least one user interface to allow the subject to interact with the apparatus.

24. The apparatus of claim 1, wherein at least one radiation source and at least one radiation detector are located within a single package.

25. The apparatus of claim 24, wherein at least one radiation source and at least one radiation detector are located together on a single printed circuit.

26. The apparatus of claim 24, wherein at least one indicator is located remotely from the single package.

27. The apparatus of claim 26, wherein:

the single package includes at least one transmitter to transmit a transmit signal corresponding to the detected radiation; and

at least one indicator includes at least one receiver to receive the transmit signal.

28. The apparatus of claim 24, wherein at least one radiation source, at least one radiation detector, and at least one indicator are located within a single package.

29. The apparatus of claim 24, wherein the single package is an accessory worn by the subject.

30. The apparatus of claim 24, wherein the single package is a sporting implement.

31. The apparatus of claim 30, wherein the sporting implement is a golf club.

32. The apparatus of claim 24, wherein the single package includes an attachment to attach the single package to an object.

33. The apparatus of claim 32, wherein the object is a body part of the subject.

34. The apparatus of claim 32, wherein the object is a sporting implement.

35. The apparatus of claim 34, further including the sporting implement.

36. The apparatus of claim 34, wherein the sporting implement is a golf club.

37. A system, comprising:

at least one apparatus, including:

at least one radiation source to emit radiation;

at least one radiation detector to detect the radiation; and

at least one indicator coupled to at least one radiation detector to provide behavior control feedback to a subject based on the detected radiation; and

at least one reflector to receive the radiation emitted from at least one apparatus and to reflect the radiation.

38. The system of claim 37, wherein at least one radiation detector is co-located with at least one radiation source.

39. The system of claim 37, wherein:

the at least one apparatus includes at least two apparatus; and

for each apparatus of the at least two apparatus, the behavior control feedback is unique.

40. The system of claim 37, wherein at least one radiation source includes at least one laser.

41. The system of claim 37, wherein at least one radiation detector includes at least one photoelectric detector.

42. The system of claim 37, wherein:

at least one apparatus includes at least two radiation detectors; and

the at least one apparatus further includes at least two radiation polarizers, each radiation polarizer of the at least two radiation polarizers being disposed in front of a different radiation detector of the at least two radiation detectors such that radiation incident to the apparatus passes through each radiation polarizer before the radiation impinges on the detectors, each radiation polarizer having a different polarization orientation.

43. The system of claim 42, wherein:

a first radiation polarizer of the at least two radiation polarizers has a first polarization orientation;

a second radiation polarizer of the at least two radiation polarizers has a second polarization orientation; and

the first polarization orientation is orthogonal to the second polarization orientation.

44. The system of claim 42, wherein the radiation emitted from the at least one apparatus is polarized radiation.

45. The system of claim 44, wherein the polarized radiation is linearly polarized radiation.

46. The system of claim 44, wherein:

the radiation emitted from at least one source is linearly polarized radiation; and

the at least one apparatus further includes at least one quarter wave plate disposed such that the linearly polarized radiation emitted from the at least one source passes through the at least one quarter wave plate to generate circularly polarized radiation.

47. The system of claim 37, wherein at least one apparatus further includes:

at least one modulator coupled to at least one radiation source to encode at least some of the radiation emitted by the at least one apparatus; and

at least one filter to filter the detected radiation so as to pass only encoded radiation, the at least one filter being at least one of optically and electrically coupled to at least one radiation detector of the at least one apparatus such that at least one indicator of the at least one apparatus provides the behavior control feedback based on detected encoded radiation.

48. The system of claim 47, wherein the at least one modulator encodes at least some of the radiation emitted by the at least one apparatus with a constant frequency.

49. The system of claim 48, wherein:

the at least one filter passes only detected radiation encoded with the constant frequency; and

at least one indicator of the at least one apparatus provides the behavior control feedback based only on the detected radiation encoded with the constant frequency.

50. The system of claim 37, wherein at least one apparatus further includes at least one impact detector, coupled to at least one indicator, to detect a pressure disturbance, wherein the at least one indicator provides the behavior control feedback based on at least one of the pressure disturbance and the detected radiation.

51. The system of claim 37, further including an implement operated by the subject to perform a movement task, wherein:

at least one radiation source and at least one radiation detector of at least one apparatus are coupled to the implement; and

the behavior control feedback provided by at least one indicator of the at least one apparatus includes at least one indication of a successful operation of the implement as the subject operates the implement to perform the movement task.

52. The system of claim 51, wherein the behavior control feedback provided by at least one indicator of the at least one apparatus includes at least one instantaneous indication of a successful operation of the implement as the subject operates the implement to perform the movement task.

53. The system of claim 51, wherein:

at least one indicator of the at least one apparatus includes at least one processor to determine a rotation angle of the implement during the movement task based on the detected radiation; and

the behavior control feedback provided by the at least one indicator is based on at least the rotation angle of the implement.

54. The system of claim 53, wherein the at least one indicator provides the behavior control feedback when the rotation angle of the implement is within a predetermined range with respect to a reference orientation.

55. The system of claim 54, wherein the predetermined range is adjustable.

56. The system of claim 54, wherein the reference orientation is based on a location of at least one reflector.

57. The system of claim 54, wherein:

the implement is a sporting implement; and

the behavior control feedback provided by the at least one indicator includes at least one indication of a successful swing of the sporting implement.

58. The system of claim 57, wherein:

the sporting implement is a golf club; and

the rotation angle is a club rotation angle about a first axis through the golf club along a length of a shaft of the golf club.

59. The system of claim 37, wherein at least one indicator of at least one apparatus includes at least one processor to process at least one detected radiation signal output by at least one radiation detector based on the detected radiation.

60. The system of claim 59, wherein at least one processor includes a timer to control the at least one indicator so as to provide the behavior control feedback for at least a minimum perceivable time, even if at least one detector of the at least one apparatus detects the radiation for less than the minimum perceivable time.

61. The system of claim 59, wherein at least one processor controls the at least one indicator so as to provide the behavior control feedback for as long as at least one detector of the at least one apparatus detects the radiation.

62. The system of claim 59, wherein at least one processor includes at least one user interface to allow the subject to interact with the at least one apparatus.

63. The system of claim 37, wherein at least one radiation source and at least one radiation detector of at least one apparatus are located within a single package.

64. The system of claim 63, wherein the at least one radiation source and the at least one radiation detector are located together on a single printed circuit.

65. The system of claim 63, wherein at least one indicator of the at least one apparatus is located remotely from the single package.

66. The system of claim 65, wherein:

the single package includes at least one transmitter to transmit a transmit signal corresponding to the detected radiation; and

at least one indicator of the at least one apparatus includes at least one receiver to receive the transmit signal.

67. The system of claim 63, wherein at least one radiation source, at least one radiation detector, and at least one indicator of the at least one apparatus are located within a single package.

68. The system of claim 63, wherein the single package is an accessory worn by the subject.

69. The system of claim 63, wherein the single package is a sporting implement.

70. The system of claim 69, wherein the sporting implement is a golf club.

71. The system of claim 63, wherein the single package includes an attachment to attach the single package to an object.

72. The system of claim 71, wherein the object is a body part of the subject.

73. The system of claim 71, wherein the object is a sporting implement.

74. The system of claim 73, further including the sporting implement.

75. The system of claim 73, wherein the sporting implement is a golf club.

76. The system of claim 37, wherein at least one reflector includes at least one polarizing filter disposed in a path of the radiation such that the radiation passes through

at least one polarizing filter before impinging on the at least one reflector, the at least one polarizing filter having a predetermined polarization orientation.

77. The system of claim 37, wherein at least one reflector includes at least one patterned reflective configuration.

78. The system of claim 37, wherein at least one reflector includes at least one bar code.

79. The system of claim 37, wherein at least one reflector includes at least one retro-reflector.

80. The system of claim 37, further including at least one splitter to split at least one of the radiation emitted by at least one apparatus before the radiation is incident to at least one reflector, and the radiation reflected by at least one reflector before the radiation is incident to at least one radiation detector, the at least one splitter splitting the radiation into at least a first portion and a second portion.

81. The system of claim 37, wherein:

at least one component of the system, the at least one component including one of a radiation source of at least one apparatus and at least one reflector, includes a coupler to couple the at least one component to an object to be operated by a subject to perform a movement task, the movement task having an expected motion path that is associated with at least one target area; and

at least one indicator of the at least one apparatus includes at least one processor, coupled to at least one radiation detector of the at least one apparatus, to determine at least one of position information related to a position of the object, motion information related to a motion of the object, and orientation information related to an orientation of the object relative to at least one target area as the subject performs the movement task, the at least one of the position information, the motion information, and the orientation information being based on the detected radiation,

wherein the at least one indicator provides the behavior control feedback based on the at least one of the position information, the motion information, and the orientation information.

82. A method of teaching a subject to perform a movement task involving the subject moving an object, the object having an expected motion path during the movement task, the expected motion path being associated with at least one target area, the method comprising a step of providing behavior control feedback to the subject based on at least one of a position of the object, a motion of the object, and an orientation of the object relative to at least one target area as the subject performs the movement task, the behavior control feedback indicating a directionality of progress associated with a performance of the movement task.

83. The method of claim 82, wherein the step of providing behavior control feedback includes a step of providing instantaneous behavior control feedback to the subject based on at least one of the position of the object, the motion of the object, and the orientation of the object relative to at least one target area as the subject performs the movement task.

84. The method of claim 82, wherein the step of providing behavior control feedback includes a step of providing at least one indication to the subject that the movement task was performed one of above or below at least one threshold criterion.

85. The method of claim 82, wherein the step of providing behavior control feedback includes a step of providing at least one indication to the subject that the movement task was performed within a particular performance range.

86. The method of claim 82, wherein the step of providing behavior control feedback includes steps of:

determining a rotation angle of the object relative to a reference orientation of at least one target area as the subject performs the movement task; and

indicating to the subject if the rotation angle is within a predetermined range.

87. The method of claim 82, wherein the object is a sporting implement, the movement task is a swing of the sporting implement, and the step of providing behavior control feedback includes a step of indicating to the subject if the swing is successful as the subject performs the swing.

88. The method of claim 87, wherein the step of indicating to the subject if the swing is successful includes steps of:

determining a rotation angle of the sporting implement relative to a reference orientation of at least one target area as the subject swings the sporting implement; and

indicating to the subject if the rotation angle is within a predetermined range.

89. The method of claim 88, wherein the step of indicating to the subject if the swing is successful includes a step of selecting the predetermined range prior to performing the swing.

90. The method of claim 89, wherein:

the sporting implement is a golf club;

the rotation angle is a club rotation angle about a first axis through the golf club along a length of a shaft of the golf club.

91. The method of claim 82, wherein the step of providing behavior control feedback includes steps of:

placing one of at least one reflector and at least one radiation source in at least one target area;

coupling another of the at least one reflector and the at least one radiation source to the object;

emitting radiation from the at least one radiation source;

moving the object to perform the movement task such that radiation emitted from the at least on radiation source impinges on the at least one reflector as the subject performs the movement task;

providing at least one reflection from the at least one reflector as the subject performs the movement task;

detecting the at least one reflection; and

providing the behavior control feedback based on the at least one detected reflection.

92. The method of claim 91, wherein the step of emitting radiation includes a step of emitting polarized radiation.

93. The method of claim 91, wherein the step of providing at least one reflection includes a step of providing at least one reflection having a predetermined polarization orientation.

94. The method of claim 91, wherein the step of providing the behavior control feedback includes a step of providing the behavior control feedback instantaneously and for at least a minimum perceivable time, even if the at least one reflection is detected for less than the minimum perceivable time.

95. The method of claim 91, wherein the step of providing the behavior control feedback includes a step of providing the behavior control feedback for as long as the at least one reflection is detected.

96. In a system including an object to be operated by a subject to perform a movement task, the object having an expected motion path during the movement task, the expected motion path being associated with at least one target area, an apparatus comprising:

at least one radiation source to emit radiation;

at least one photoelectric detector to detect the radiation; and

at least one processor, coupled to the at least one photoelectric detector, to determine at least one of position information related to a position of the object, motion information related to a motion of the object, and orientation information related to an orientation of the object with respect to at least one target area as the subject performs the movement task, based on the detected radiation.

97. The apparatus of claim 96, wherein at least one of the at least one radiation source and the at least one photoelectric detector includes a coupler to couple the at least one of the at least one radiation source and the at least one photoelectric detector to the object.

98. The apparatus of claim 97, wherein at least one target area includes at least one reflector, and wherein:

at least one radiation source is coupled to the object such that the radiation emitted from the at least one radiation source impinges on the at least one reflector to provide at least one reflection as the subject performs the movement task; and

at least one photoelectric detector is coupled to the object such that the at least one photoelectric detector detects the at least one reflection.

99. The apparatus of claim 96, wherein:

at least one reflector is coupled to the object; and

the at least one radiation source and the at least one photoelectric detector are positioned such that the radiation emitted by the at least one radiation source impinges on the at least one photoelectric detector after being reflected by at least one reflector coupled to the object as the subject performs the movement task.

100. The apparatus of claim 96, further including at least one indicator, coupled to the at least one processor, to provide behavior control feedback to the subject based on at least one of the position information, the motion information, and the orientation information.

101. The apparatus of claim 96, further including at least one impact detector to detect a pressure disturbance and to output a detected disturbance signal to the at least one processor, wherein the at least one processor determines impact information based on at least the detected disturbance signal.

102. The apparatus of claim 101, further including at least one indicator, coupled to the at least one processor, to provide behavior control feedback to the subject based on at least one of the position information, the motion information, the orientation information, and the impact information.

103. The apparatus of claim 96, wherein the motion information determined by the at least one processor includes a velocity of the object as the subject performs the movement task.

104. The apparatus of claim 96, wherein:

at least one target area includes a reference point and is represented by a three-dimensional coordinate system including first, second, and third axes intersecting at the reference point and perpendicular to each other, the first and second axes defining a plane including the at least one target area and the third axis being perpendicular to the plane including the at least one target area; and

the position information determined by the at least one processor includes at least one object distance of the object from the plane including the at least one target area as the object traverses the at least one target area, the at least one object distance being parallel to the third axis.

105. The apparatus of claim 96, wherein:

at least one target area includes a reference point and is represented by a three-dimensional coordinate system including first, second, and third axes intersecting at the reference point and perpendicular to each other, the first and second axes defining a plane including the at least one target area and the third axis being perpendicular to the plane including the at least one target area; and

the motion information determined by the at least one processor includes a motion path angle of a projected actual motion path of the object as the object traverses the at least one target area, the motion path angle being defined by an actual motion path of the object as projected onto the plane including the at least one target area and at least one of the first and second axes.

106. The apparatus of claim 105, wherein:

the radiation emitted by the at least one source is polarized;

the at least one reflector includes at least two polarizing filters, each polarizing filter having a different polarization with respect to one of the first and second axes, each polarizing filter covering a different portion of the at least one reflector such that the at least one reflection is differently polarized based on the portion of the at least one reflector from which the radiation is reflected; and

the at least one detector outputs the detected radiation signal to the at least one processor based on differently polarized reflections as the object traverses the at least one target area.

107. The apparatus of claim 105, wherein the at least one reflector includes at least two different bar codes.

108. The apparatus of claim 105, wherein the motion information determined by the at least one processor includes at least one object distance of the object from the plane including the at least one target area as the object traverses the at least one target area, the at least one object distance being parallel to the third axis.

109. The apparatus of claim 108, wherein the motion information determined by the at least one processor includes an approach angle of the actual motion path of the object as the object traverses the at least one target area, the approach angle being defined by the actual motion path and at least one of the third axis and the plane including the at least one target area.

110. The apparatus of claim 109, wherein the at least one processor determines the approach angle based on the motion path angle and at least two object distances of the

object from the plane including the at least one target area as the object traverses the at least one target area.

111. The apparatus of claim 96, wherein:

at least one target area includes a reference point and is represented by a three-dimensional coordinate system including first, second, and third axes intersecting at the reference point and perpendicular to each other, the first and second axes defining a plane including the at least one target area and the third axis being perpendicular to the plane including the at least one target area;

the object is represented by a fourth axis passing through the object and perpendicular to an actual motion path of the object as the object traverses the at least one target area; and

the orientation information determined by the at least one processor includes an object orientation angle of the object as the object traverses the at least one target area, the object orientation angle being defined as a rotation of the object about the fourth axis relative to at least one of the first and second axes defining the plane of the at least one target area.

112. The apparatus of claim 111, wherein the orientation information determined by the at least one processor includes a pitch angle of the object as the object traverses the at least one target area, the pitch angle being defined by the fourth axis and a second plane, the second plane being defined by the third axis and one of the first and second axes.

113. The apparatus of claim 112, wherein the orientation information determined by the at least one processor includes a roll angle of the object as the object traverses the at least one target area, the roll angle being defined by the fourth axis and a third plane, the third plane being defined by the third axis and another of the first and second axes.

114. The apparatus of claim 96, wherein the at least one processor further determines a trajectory projection of one of a real and virtual projectile situated in at least one target area as the object traverses the at least one target area, the at least one processor

determining the trajectory projection based on at least one of the position information, the motion information, and the orientation information of the object.

115. The apparatus of claim 114, wherein the at least one processor includes memory storage to store information related to an environment in which the subject performs the movement task.

116. The apparatus of claim 115, further including at least one indicator, coupled to the at least one controller, to provide an indication of the environment in which the subject performs the movement task, wherein the at least one indicator superimposes the trajectory projection onto the indication of the environment.

117. The apparatus of claim 116, wherein:

the object is a golf club;

the one of the real projectile and the virtual projectile is a respective one of a real golf ball and a virtual golf ball; and

the environment includes at least a portion of a golf course.

118. The apparatus of claim 115, wherein the at least one processor further includes a comparator to make a comparison of the trajectory projection and the information related to the environment.

119. The apparatus of claim 118, further including at least one indicator, coupled to the at least one processor, to provide behavior control feedback based on the comparison.

120. The apparatus of claim 119, wherein:

the object is a golf club;

the one of the real projectile and the virtual projectile is a respective one of a real golf ball and a virtual golf ball; and

the environment includes at least a portion of a golf course.

121. A movement training apparatus, comprising:

an implement to be operated by a subject to perform a movement task;

at least one radiation source to emit radiation, the radiation having a predetermined direction of propagation with respect to the implement;

at least one detector to detect the radiation; and

at least one indicator, coupled to the at least one detector, to provide behavior control feedback to a subject based on the detected radiation as the subject operates the implement to perform a movement task,

wherein at least one of the at least one radiation source and the at least one radiation detector is coupled to the implement.

122. The apparatus of claim 121, wherein:

the implement is a sporting implement;

the movement task includes a swing of the sporting implement; and

the behavior control feedback includes an indication of a successful swing of the sporting implement.

123. The apparatus of claim 122, wherein the behavior control feedback includes an instantaneous indication of a successful swing of the sporting implement.

124. The apparatus of claim 122, wherein:

the at least one indicator includes at least one processor to determine a rotation angle of the sporting implement during the swing of the sporting implement; and

the behavior control feedback is based on at least the rotation angle.

125. The apparatus of claim 124, wherein:

at least a first portion of the implement has an essentially rod-like shape, the rod-like shaped first portion being represented by a first axis through the implement along a length of the rod-like shaped first portion; and

the rotation angle is about the first axis.

126. The apparatus of claim 125, wherein:

the sporting implement is a golf club; and

the rotation angle is a club rotation angle.

127. The apparatus of claim 121, wherein at least one indicator is coupled to the implement.

128. The apparatus of claim 121, wherein:

at least a first portion of the implement has an essentially rod-like shape, the rod-like shaped first portion being represented by a first axis through the implement along a length of the rod-like shaped first portion; and

the predetermined direction of propagation of the radiation is with respect to the first axis.

129. The apparatus of claim 128, wherein the at least one radiation source is coupled to the implement such that at some point the radiation propagates in a direction which is essentially parallel to the first axis.

130. The apparatus of claim 128, wherein the at least one radiation source and the at least one detector are arranged such that the radiation propagates from the at least one radiation source to the at least one detector over a path that includes at least one reflection of the radiation.

131. The apparatus of claim 128, wherein:

the implement includes a second portion for striking an object, the second portion including a target zone; and

the at least one radiation source is coupled to the implement such that the radiation is directed proximate to the target zone.

132. The apparatus of claim 131, wherein:

the implement is a golf club;

the first portion is a shaft of the golf club;

the second portion is a head of the golf club; and

the target zone includes a center of a club face of the head of the golf club.

133. The apparatus of claim 121, wherein the at least one radiation source includes at least one laser.

134. The apparatus of claim 121, wherein the at least one radiation source is included within the implement.

135. The apparatus of claim 134, wherein the implement includes at least one fiber optic cable coupled to the at least one radiation source to transport the radiation.

136. A method for indicating a successful golf club swing to a subject as the subject swings a golf club across at least one target area, including a step of providing at least one instantaneous indication to the subject if a club rotation angle of the golf club with respect to the at least one target area is within a predetermined range as the golf club traverses the at least one target area.

137. A method for indicating an unsuccessful golf club swing to a subject as the subject swings a golf club across at least one target area, including a step of providing at least one instantaneous indication to the subject if a club rotation angle of the golf club with respect to the at least one target area is not within a predetermined range as the golf club traverses the at least one target area.